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049PCT 0716

Patent Claims

1. Method for production of single-layer thermochromic polymer layers by means of extrusion in which at least one colourant, and if necessary further additives such as melting agents and/or developers, is added to a polymer at the beginning of the extrusion process and is extruded to form the thermochromic polymer layer.
2. Method according to claim 1, characterised in that as polymer, polyethylene, polypropylene, polyester, polyamide and/or acrylonitrile-butadiene-styrene-copolymer is used.
3. Method according to one of the claims 1 or 2, characterised in that as colourants, pyridinium phenolate betaines, sulphophthalein structures, Reichardt colourants, triphenylmethane colourants, pyranines, indicator colourants or azo pigments are used.
4. Method according to one of the claims 1 to 4, characterised in that as melting agent, octadecanol, dodecanol, hydroxylic acids and/or 1-hexadecanol is used.
5. Method according to one of the claims 1 to 4, characterised in that as developers, 2,2'-bis(4-hydroxyphenyl)propane, 2,2'-bis(4-hydroxyphenyl)sulphone and/or gallic acid dodecyl ester is used.

6. Method according to one of the claims 1 to 5, characterised in that the colourant is added to the polymer in the supply funnel.
7. Method according to one of the claims 1 to 6, characterised in that the colourant, the polymer and if necessary further additives are used in the form of a master batch.
8. Thermochromic polymer layer which can be produced according to the method according to one of the claims 1 to 7.
9. Polymer layer according to claim 8, characterised in that a reversible colour switching is effected in a wide temperature range of ΔT from 1 to 25°C.
10. Polymer layer according to claim 8, characterised in that a reversible colour switching is effected in a narrow temperature range of ΔT from 1 to 2°C.
11. Polymer layer according to one of the claims 8 to 10, characterised in that the colour switching is accompanied by a changed translucence behaviour.
12. Polymer layer according to one of the claims 8 to 11, characterised in that the layer has a layer thickness of 1 μm to 10 cm.
13. Polymer layer according to claim 12, characterised in that the layer thickness is from 1 μm to 1 mm.
14. Polymer layer according to claim 12 or 13,

characterised in that the polymer layer is a polymer film.

15. Multilayer layer composite system containing at least one thermochromic polymer layer according to one of the claims 8 to 14 and at least one further film.